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U.S. BUREAU OF AGRICULTURAL ECONOMICS



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VALUE AND IMPORTANCE OF CROPS SUBJECT TO INFESTATION

BY THE MEDITERRANEAN FRUIT FLY

Preliminary estimates by John B. Shepard, Senior Agri. Statistician

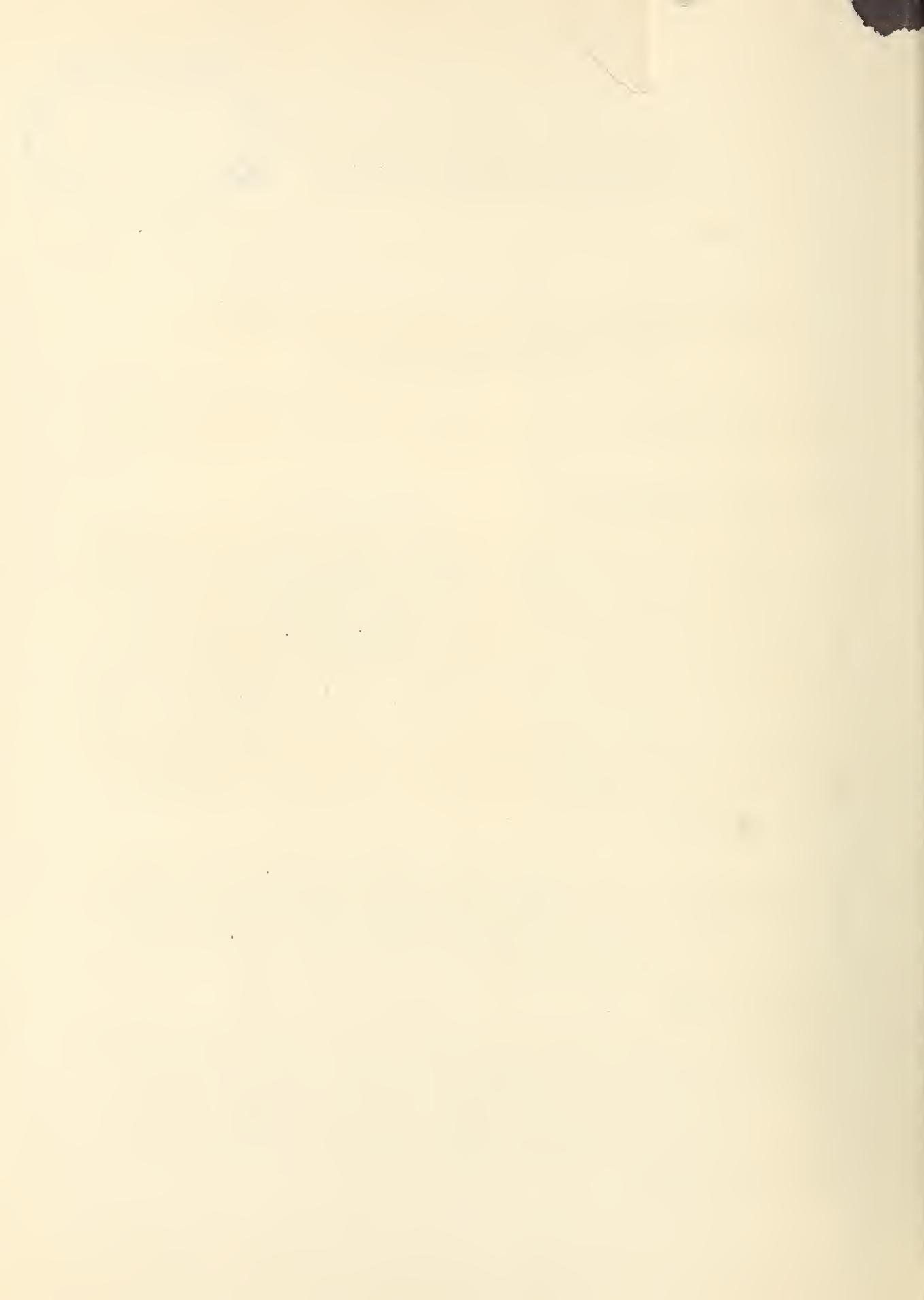
AREA LIKELY TO BE AFFECTED:

There seems to be little reason to doubt that the Mediterranean fruit fly could regularly survive winter conditions along the Gulf of Mexico and in Southern California. It could probably maintain itself most winters north as far as the coast region of the Carolinas and through the main fruit belts of Georgia, Alabama, Mississippi, Louisiana, the southern portions of Texas and Arizona and probably in most of California. The insect may even prove to be of economic importance in some of the fruit sections of Tennessee, Arkansas, and Oregon. When carried north in infected fruit early in the summer it may become temporarily numerous and locally destructive in northern fruit areas. As the climatic conditions under which the fly would survive cannot be fully determined in advance, no attempt has been made, in preparing these preliminary estimates, to subdivide the threatened areas except along State lines.

In preparing the tables submitted herewith, separate estimates have been prepared for the United States as a whole and for the group of States where the fly would be most likely to become a serious pest, this group including South Carolina, the Gulf States, Arizona, and California, nine States in all.

PRODUCTS AFFECTED:

The fruit fly affects a great diversity of fruits and vegetables. This greatly complicates the problem of eradication or control, but some of the crops, such as tomatoes, and grapes, which are listed as occasional host plants, and which may be affected by quarantine regulations, are not ordinarily seriously damaged by the Mediterranean fruit fly. Separate estimates for these products are shown in the accompanying tables.



ACREAGE, VALUE, PRODUCTION, AND SHIPMENTS OF PRODUCTS
SUBJECT TO INFESTATION

In the nine states of South Carolina, Georgia, Florida, Alabama, Louisiana, Mississippi, Texas, Arizona, and California, where the fruit fly would be most likely to survive, the acreage in the principal fruits subject to severe infestation totals about 1,570,000 acres, and during the last three years the products have had an annual value to the growers of about \$240,000,000. The value when packed for shipment is somewhat above this figure and the value as delivered to consumers is probably several times this amount.

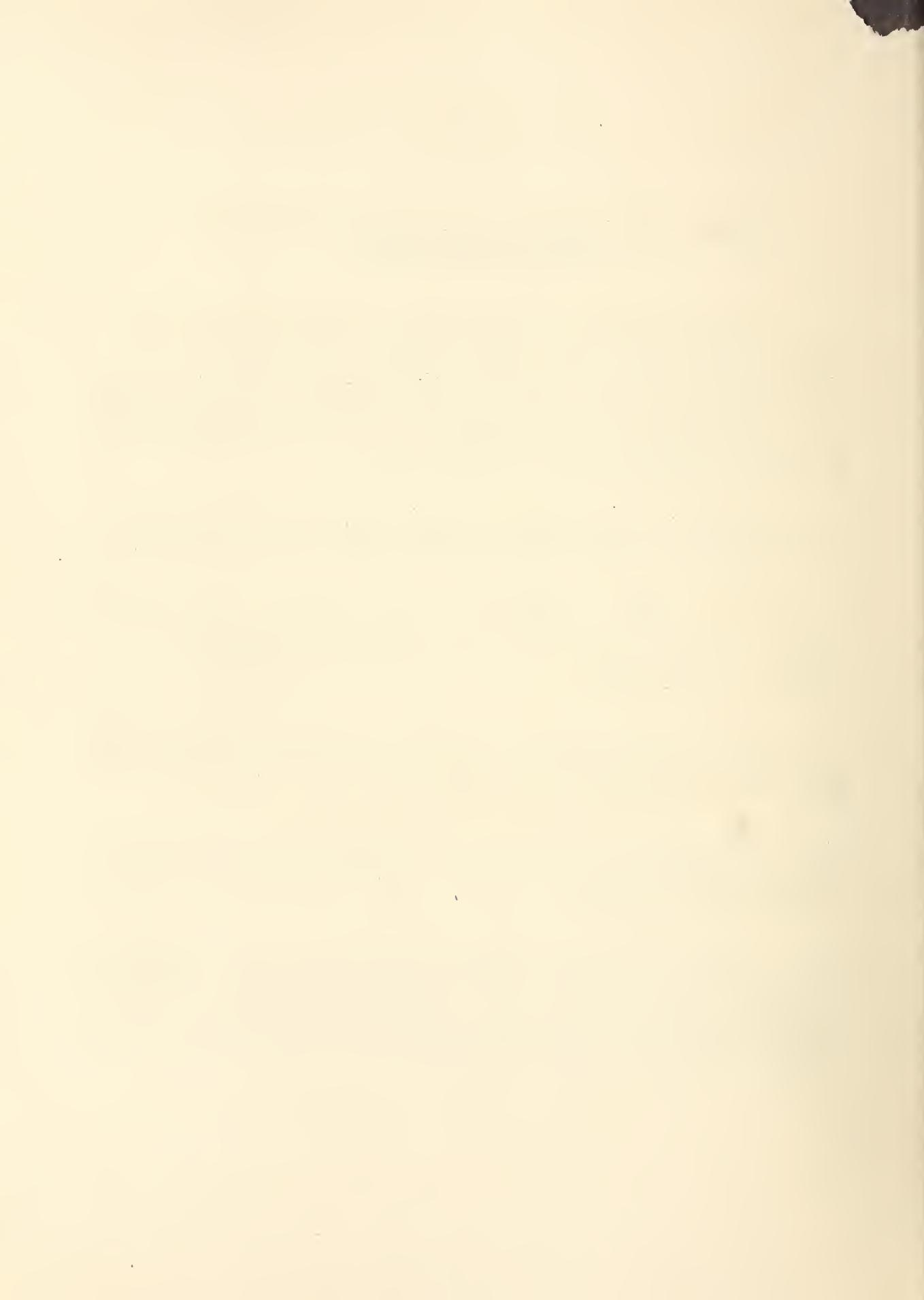
The value of the orchards and groves in these nine states is probably seven to eight times the average yearly value of the products, indicating a total value in these states of around \$1,800,000,000.

For the country as a whole, the total acreage in the fruit crops subject to most serious infestation is about 2,500,000 acres and the three-year average annual value of the products has been above \$300,000,000. The investments in the land and orchards is probably not far from \$2,000,000,000.

The acreages, production, shipments, and value of the individual crops likely to be most seriously affected are shown in the table herewith, together with some details for various other crops which may be affected to some extent by the quarantines.

These preliminary estimates are based chiefly on published reports of the Department of Agriculture. Items for which no official estimates have been issued have been interpolated from such statistics as were quickly available.

Various cultivated fruits not shown in the table are subject to severe infestation, the list probably including avocados, pomegranates, persimmons, limes, kumquats, guavas, mangoes, and various other fruits of even less commercial importance. No accurate statistics of these crops are available but including them in the table probably would not increase the totals by more than 1 per cent.



7.

CALCULATIONS OF ACREAGE, PRODUCTION, VALUE AND CAR LOT SHIPMENTS
OF CROPS SUBJECT TO INFESTATION BY THE MEDITERRANEAN FRUIT FLY.

Principal :	UNITED STATES			: 9 States most Seriously Threatened											
Products :	Average	Average	Car lot a	Avr. Pro-	Average	Car lot a	subject to	ACREAGE	production	value	shipments	Acre-	duction	value	Shipments
serious infestation:	: 1926-1928	: 1926-1928	: 1926-1928	: 1926-	: 1926-	: 1926-	:	: 1926-1928	: 1926-1928	: 1926-1928	: 1926-1928	: 1926-1928	: 1926-1928	: 1926-1928	
	: 1000 A	: 1000 Tons.	: 1000 dols	: 1000 cars	: 1000 A	: 1000 T.	: 1000 dols	: 1000 cars							
Citrus fruits	600	: 2,044	: 169,350	: 108	: 600	: 2,044	: 169,350b	: 108							
Peaches	800	: 1,531	: 60,856	: 53	: 390	: 895	: 28,100	: 34							
Pears	340	: 562	: 23,648	: 23	: 120	: 241	: 9,804	: 11							
Prunes and															
Plums	350	: 779	: 24,750	: 7	: 250	: d 584	: 19,000	: 3							
Cherries	210	: 109	: 18,000	: 2.4	: 22	: 28	: 3,050	: 1							
Apricots															
(Cal. only)	100	: 185	: 10,498	c	: 100	: 185	: 10,498	c							
Figs	90	: 11 Dry	: 1,974	c	: 90	: Dry 11	: 1,974	c							
		: Other 13													
TOTAL	: 2,490	: 5,234	: 309,076	: 193	: 1572	: 4,001	: 241,776	: 157							

PRINCIPAL AGRICULTURAL PRODUCTS THAT MAY BE AFFECTED BY
QUARANTINE AND CONTROL MEASURES BUT WHICH ARE NOT
LIKELY TO BE SERIOUSLY INFESTED.

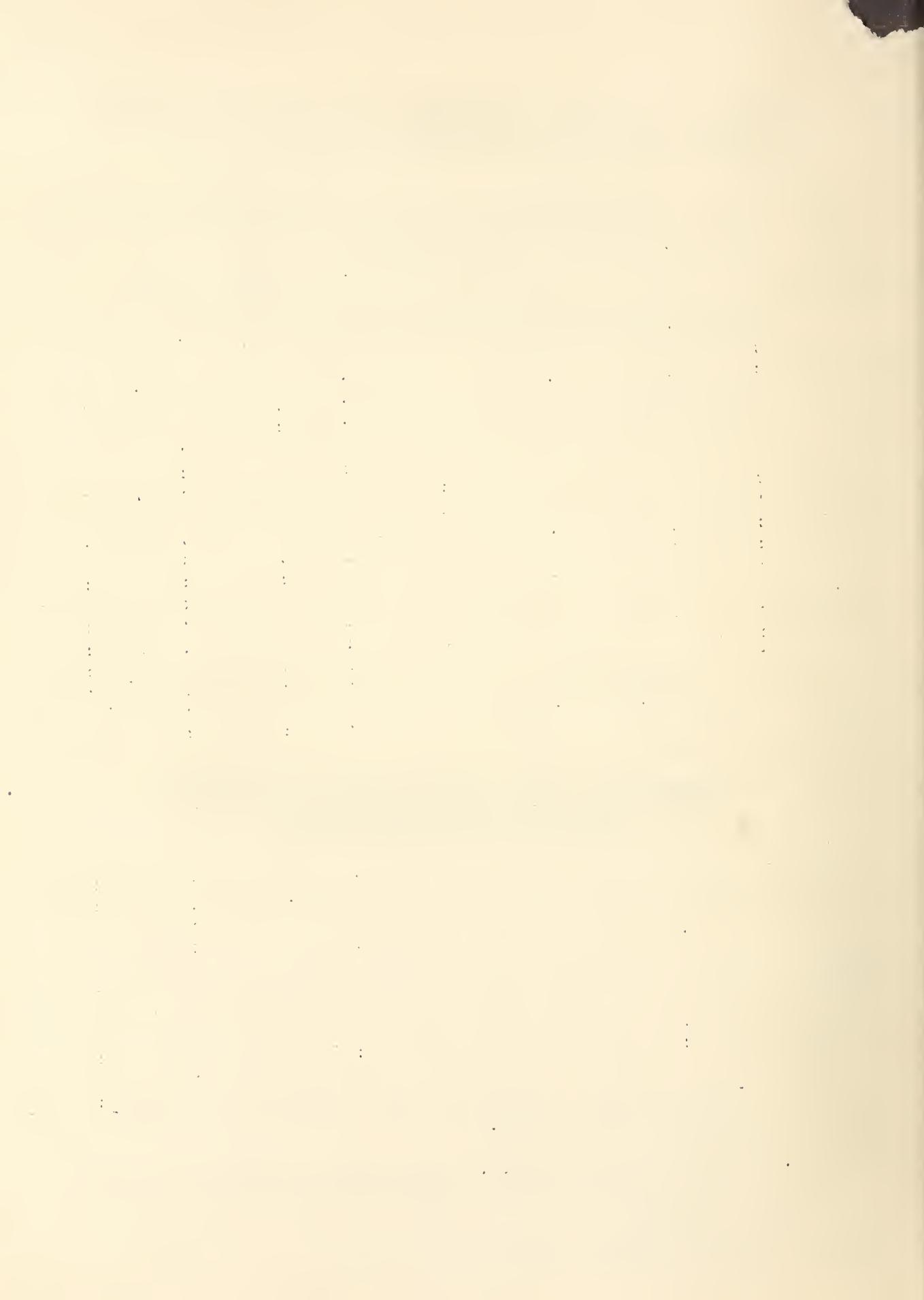
Tomatoes	: 470	: 1,769	: 51,160	: 30	: 136	: 523	: 27,500	: 20
Green Peppers								
Peppers	: 29	: 77	: 7,535	: 3	: 15	: 40	: 5,200	: 2
Eggplant	: 4	: 18	: 886	.2	: 2.5	: 11	: 600	.2
Grapes	: 830	: 2,555	: 59,659	: 80	: 682	: 2,297	: 47,716	: 71
Apples	: 2,750	: 4,626	: 178,251	: 118	: 157	: 331	: 9,834	: 5

a/ Car lot shipments fresh fruit only.

b/ California citrus fruits valued at price of naked fruit delivered to packing house. Florida valuation at f.o.b. price per packed box less selling charge and less \$1.00 per box to allow for cost of picking and packing.

c/ Less than 1,000 cars.

d/ Plums & prunes combined in terms of fresh fruit.



SOME MEASURES OF THE IMPORTANCE OF PRODUCTS SUBJECT TO INFESTATION BY
THE MEDITERRANEAN FRUIT FLY

CAR LOT SHIPMENTS

The Department of Agriculture secures from the railroads reports on the carlot shipments of 38 kinds of fruits and vegetables.^{a/} The total number of carloads of these products moved during 1928 was 1,081,611 exclusive of imports. Of this total, oranges, grapefruit, lemons, and mixed citrus fruits accounted for 103,067 cars, of which 39,597 cars moved from Florida. All of this fruit is subject to infestation by the fruit fly, if its spread is not controlled. In addition, shipments of pears, plums, cherries, mixed fruits and fresh and dried prunes and peaches accounted for 108,015 cars, of which 65,477 cars originated in the 9 States where these crops are most seriously threatened by the fruit fly.

While it is not expected that apples, grapes, tomatoes, peppers, and eggplant would suffer seriously from fruit fly infestation, all of these crops may serve as host plants, and they would, therefore, be affected more or less by quarantine and control measures. Of these products, there were shipped in 1928 a total of 233,727 cars, of which 101,314 cars moved from the nine States most seriously threatened, and 10,477 cars moved from Florida.

Summarizing the above, it appears that 269,858 cars of fruits subject to infestation originated in the nine States and this total was nearly one-fourth of all carlot shipments of fruits and vegetables reported for all States.

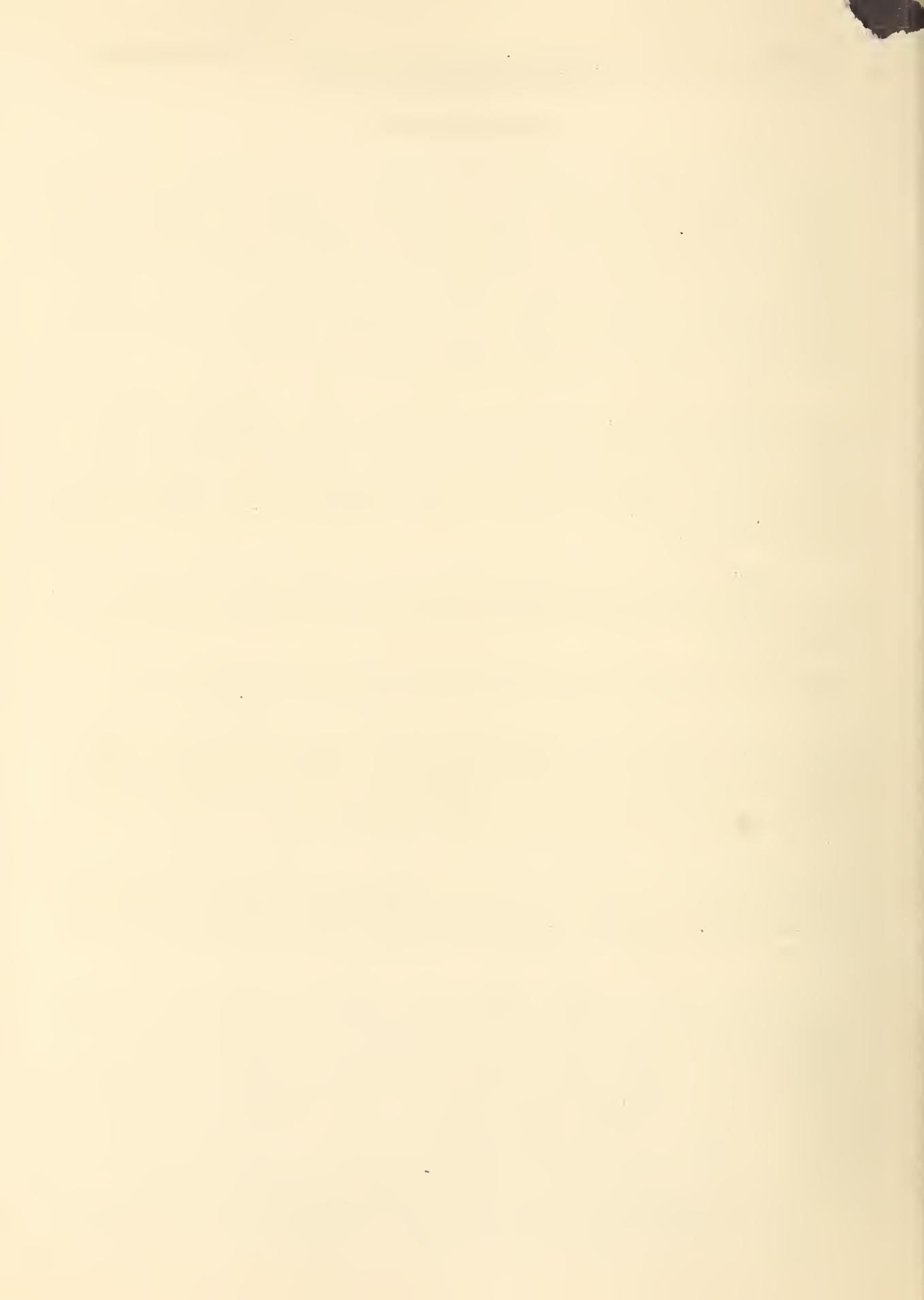
MARKET UNLOADS OF PRODUCTS AFFECTED BY THE MEDITERRANEAN FRUIT FLY

In order to measure the extent to which the consumers in various parts of the country might be affected by the spread of the Mediterranean fruit fly, the records of the cars unloaded at principal markets were reviewed to determine how many of these were of products subject to infestation and moving from States where infestation may become serious.

These unload records include only 18 of the more important fruits and vegetables, and they do not include shipments of mixed citrus fruits or other mixed cars or quantities moved in less than carload lots. The figures do, however, include a sufficient volume of commodities to be fairly representative of market supplies of fresh fruits and vegetables.

During 1928 the carlot unloads of the 18 products at New York City, exclusive of imports, totaled 125,531 cars. Of these, 23,090 cars, or 18% were of products subject to severe infestation by the Mediterranean fruit fly and shipped from the nine States most seriously threatened. The carloads of apples, grapes and tomatoes, all of which are subject to occasional infestation, totaled 32,770 cars, of which 18,296 carloads originated in the nine States. In all, 41,386 carloads, or just one-third of the total unloads of domestic fruits and vegetables reported for New York City were of products subject to infestation and shipped from the nine States.

^{a/} Other products known to be subject to severe infestation, but for which no shipment figures are available, include apricots, persimmons, kumquats, limes, guavas, quinces, mangoes, and some less important crops.



Corresponding percentages shown by the 1928 unloads of other cities are as follows:

Boston.....	33.2	St. Louis.....	23.3
Philadelphia.....	33.5	Denver.....	21.7
Chicago.....	26.4	San Francisco.....	52.2
Washington, D. C..	25.1	Seattle.....	24.4
Detroit.....	24.8		

VALUE OF QUARANTINED FRUIT IN FLORIDA^{a/}

On the basis of the average price of packed fruit the citrus fruit of Florida for the past three years has been worth f.o.b. an average of \$47,500,000.

On the basis of the quarantine zones as they stood on June 1 the "infested zone" included areas which had produced 25% of the shipments during the last three years and the infested and protective zones together included an area which has produced 54% of the total shipments.

If the fruit fly were not present, and the light set of fruit this year were counter-balanced by higher prices, so that the average value of the fruit was equal to the average of the last three years, we could assume that the citrus fruit of the infested zone would be worth about \$11,900,000, and that of the protective and infested zone combined would be worth \$25,650,000.

On the basis of the boundaries of the zones as they stood the third week in May, it was estimated that the three-year average value of the tomato crop was \$30,000 in the infested zone and \$60,000 in the infested and protective zone combined. Peppers in these two zones are estimated to have been worth \$250,000 per year and eggplants \$3,000 per year.

^{a'} Note:--Expanding the tables to include peaches, pears, plums, figs, avocados, mangoes, guavas, etc. would probably increase the totals about 1 per cent.

